

THE *PANDELETEIUS* SUBGENUS *EXMENETYPUS*
VOSS IN CENTRAL AMERICA
(COLEOPTERA:CURCULIONIDAE, TANYMECINI)

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ABSTRACT

The *Pandeleteius* subgenus *Exmenetypus* Voss is defined and revised for Central America. Included are *hieroglyphicus* Champion from Costa Rica, *opalescens* (Faust) from Panama, and *championi* n. sp. from Guatemala.

The subgenus *Exmenetypus* was erected by Voss in 1954 for *Pandeleteius hieroglyphicus* Champion, and, until now, this has remained the only species assigned to the subgenus. While working on a revision of *Pandeleteius* of Venezuela and Colombia, I discovered that the type series of *Pandeleteius hieroglyphicus* Champion contains not 1 but 3 closely related species. Of these, the 2 specimens from Costa Rica are *hieroglyphicus*, the 7 specimens from Panama are *opalescens* (Faust), and the 3 specimens from Guatemala are a new species, which I am calling *championi*. Most of these specimens bear the notation "var." or "var. worn" on the identification label, so Champion must have had reservations about their status even though this is not mentioned in his description.

SUBGENUS **Exmenetypus** Voss

Pandeleteius subgenus *Exmenetypus* Voss, 1954:227, 231. Howden, 1966:176.

Type-species. *Pandeleteius hieroglyphicus* Champion, by monotypy.

Pandeleteius opalescens (Faust) and *championi*, new species, are now added to the subgenus. Six additional new species will be added from Venezuela and Colombia in my review of the *Pandeleteius* of those countries. *Pandeleteius erubescens* Champion and *boops* Champion, which Voss said probably belong to *Exmenetypus*, were removed from *Pandeleteius* to the genus *Airosimus* Howden (1966:176).

The subgenus is characterized as follows: Beak short; shorter from anterior edge of eyes than distance between eyes at their anterior edge; interantennal line closer to base than to apex. Beak apicad of glabrous interantennal line abruptly elevated, the elevated portion clothed with scales smaller, smoother and shinier than on the rest of the beak; epistoma carinate. Eyes prominent. Ocular vibrissae absent or vestigial. Pronotum produced anteriorly over head. Fore coxae very close, separated by no more than the greatest width of the scape in the male. Fore femur abruptly swollen, with or without granules on inner surface. Prosternum and fore coxae without long hairs. Anterior portion of ventrites 3, 4, and 5 slightly depressed in some species. Specimens often iridescent pale yellow.

Secondary characteristics include the following: Scrobe obliquely angled, tapered at its termination at or near ventral surface. Pronotum with basal and

apical constrictions complete, sides rounded between constrictions, widest over fore coxae. Scutellum squamose. Middle and hind coxae glabrous. Hind corbel with a rudimentary semi-enclosing carina present in some species. Caudal edge of ventrites 2, 3, and 4 may be abruptly perpendicular.

The subgenus occurs in Central America, Colombia, and Venezuela at elevations below 3000 feet. It is not known from the remainder of South America.

The metallic lustre is intraspecifically variable and may apply to the entire dorsum of the beetle. In this subgenus the spermatheca is so uniform as to be of little use for interspecific diagnosis, but the aedeagus is excellent. The beak has many important characters also.

Key to Central American *Exmenetypus*

1. Setae of alternate intervals of elytra more numerous and conspicuous. Ventrite 5 of female grossly tumid. Tucurrique, Costa Rica *hieroglyphicus* Champ.
- 1'. Setae of all intervals small, evenly distributed. Ventrite 5 of female scarcely convex 2
2. Aedeagus with a median carina dorsally, its apex truncate. Hind tibia of male hollowed on inner surface. Panama and Coastal Cordillera of Venezuela *opalescens* (Faust)
- 2'. Aedeagus unmodified dorsally, its apex elongate, pointed. Hind tibia of male at most slightly flattened. Guatemala *championi* n.sp.

Pandeteius (Exmenetypus) hieroglyphicus Champion (Fig. 1, 3, 9, 10, 12)

Pandeteius hieroglyphicus Champion, 1911:190. Voss, 1954:227, 231; Howden, 1966:176. Lectotype, here designated, female, "Tucurrique, Costa Rica", "Coll. Schild & Burgdorf", "TYPE" on red paper, handwritten label "*Pandeteius hieroglyphicus* Ch. type", and my lectotype label [USNM].

Diagnosis: Ventrite 5 of female tumid (Fig. 12). Setae of alternate intervals of elytra very conspicuous, almost perpendicular at their bases, their apices strongly bent over and not touching surface, separated by 1 to 3 scales; setae of intervals 2, 4, and 6 sparse until apical third where they are separated by 3 to 5 scales.

Description: Males unknown. Females length 3.8, 3.9 mm, width 1.4 mm. Color and pattern as described and illustrated by Champion except no "opalescent whitish" scales. Very densely squamose.

Beak (Fig. 3) as described, 1.5 times wider between anterior edge of eyes than long; 0.83 times as wide at interantennal line as head between eyes. Epistoma occupying approximately three-fifths of anterior edge of beak, its apex reaching two-thirds to interantennal line. Antennal club slender, tapered at each end, 0.76 times as long as scape.

Prothorax (Fig. 1) 1.04 times longer than wide. Apical and basal constrictions equal on sides, apex considerably produced apically (illustrations in Champion misleading), at median line basal constriction at about basal fifth, apical constriction at about apical third. Disc of pronotum with median line finely impressed; a vague transverse depression on either side of disc.

Champion's description of elytra very misleading and his illustration showing apex too short. Elytra (Fig. 1) 2.8 times longer than prothorax; across humeri approximately 1.3 times wider than thorax. Sides parallel for basal seventh thence gradually divergent to just beyond middle, thence gently convergent to apex; the apical terminus of intervals 4 to 6 produced and conspicuous in dorsal view. Base slightly arcuately emarginate between striae 5. Intervals 2, 3, and 4 conjointly raised in a weak convexity on basal seventh. Intervals 3 and 5 slightly elevated and wider on median third where they are up to 6 scales wide. Intervals otherwise equal, narrow and very feebly convex on base and towards sides, flat on apical third. Strial punctures very fine, deepest behind basal swelling. Setae of intervals 1, 3, and 5 (Fig. 9) very conspicuous, almost perpendicular at their bases, their apices strongly bent over and not touching surface, separated by 1 to 3 scales. Setae of intervals 2, 4, and 6 absent or sparse, small and recumbent until apical third where they are separated by 3 to 5 scales and formed as neighboring setae. Scales of elytra (Fig. 10), especially towards apex, posteriorly imbricate and margined.

Fore femur 1.6 to 1.9 times wider than hind femur, without teeth or other modification on inner edge. Fore tibia with 6 or 7 moderate, acute, evenly distributed teeth on inner edge. Hind tibia flattened, without scales on inner surface distally. Hind corbel of lectotype with a brief, very faint carina occupying approximately one-third of the distal width; carina more obsolete in paralectotype. Fore coxae separated by distance approximately equal to greatest width of scape. Ventrites 3 and 4 considerably elevated medially, slightly rounded to their posterior margins which are abruptly perpendicular medially to within 0.1 of sides; anteriorly gradually deflected to preceding segment, the area with scattered scales on segment 3, none on segment 4. Ventrite 5 (Fig. 12) with central two-thirds occupied by a gross tumidity highest apically; up to 3 scales on tumidity, otherwise clothed with only fine setae; as wide across base as long in lectotype, 1.75 times wider than long in paralectotype.

Type Material: Paralectotype, here designated, female, first 2 labels as lectotype, then "U.S. Nat. Mus. 1911-150", "Cotype" circled in yellow, "♀", "B.C.A., Col., IV.pt.3. *Pandeleiteius hieroglyphicus* Ch.", "Sp. figured" and my paralectotype label [BMNH].

Champion designated the 2 females from Costa Rica as "the types". He apparently considered the United States National Museum specimen "the type" in view of the label which I believe to be in his handwriting. Also in a statement in his introduction, p.vi, that he was indebted to the U. S. National Museum because they allowed him to keep cotypes, he apparently considered the specimen returned to them as the more important one.

The lectotype is missing the tarsus from the right hind leg, the tarsal claw from the left middle leg, and the left foreleg is broken off beyond the trochanter and mounted on the point with the beetle. The paralectotype is in nearly perfect condition, missing no parts.

Discussion: The species is known to date from only the 2 female specimens. The number of setae per interval on the disc of the elytra before the declivity on the paralectotype is as follows: interval 1: 16, 12; int. 2: 4, 5; int. 3: 17, 21; int. 4: 4, 6; int. 5: 14, 10 (partial count). Within the subgenus the grossly tumid ventrite 5 is unique, although other extreme modifications of the abdomen occur in Venezuelan *Exmenetypus*. The characteristics of the elytral setae and larger size are the only other certain differences noted between

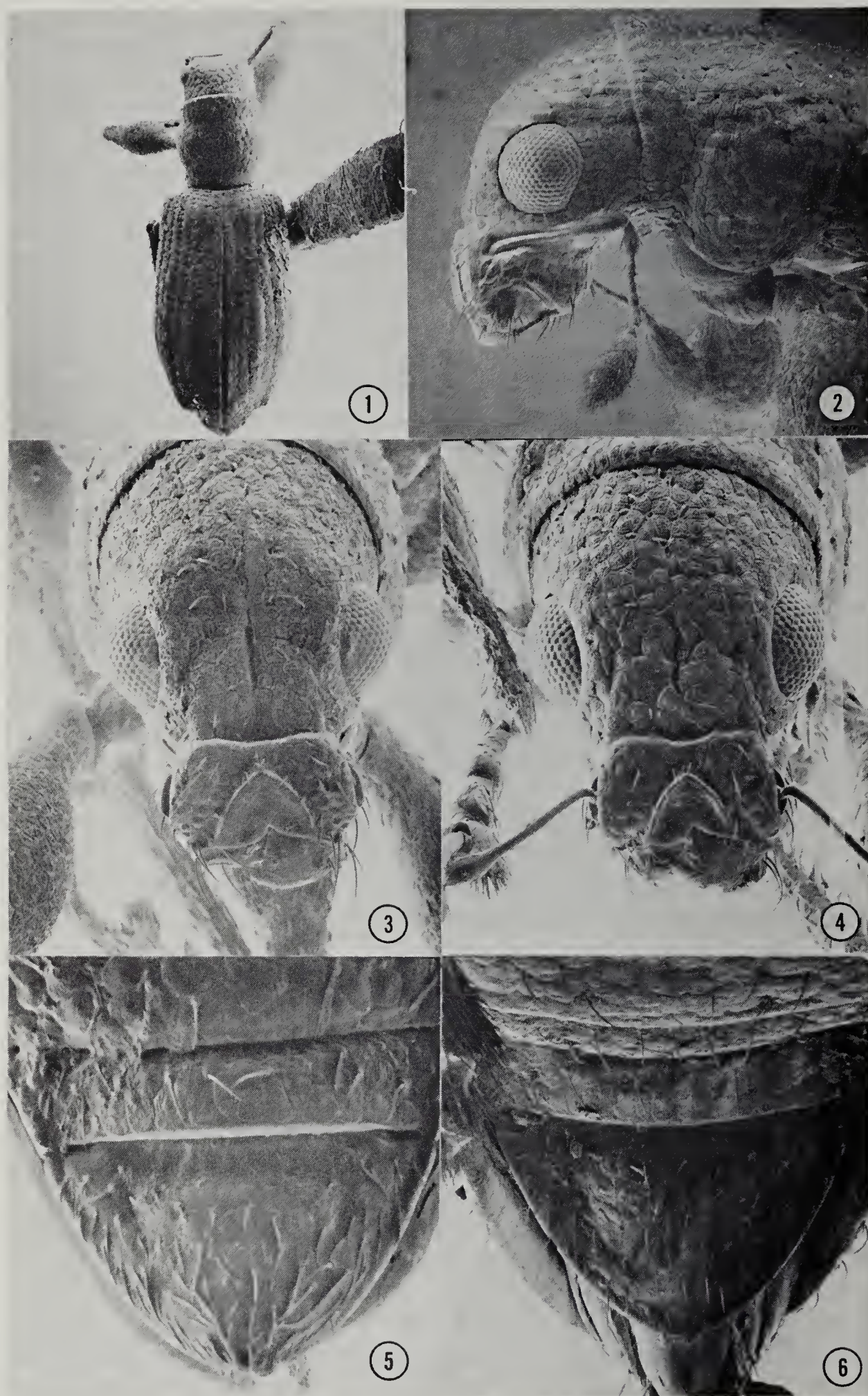


Fig. 1-6. *Pandeteleius* (*Exmenetypus*) spp.: 1) *hieroglyphicus*, paralectotype, dorsal view; 2) *opalescens*, Barro Colorado, profile head and beak; 3) *hieroglyphicus*, paralectotype, anterior view head and beak; 4) *championi*, allotype, anterior view of head and beak; 5) *championi*, allotype, ventrite 5; 6) *opalescens*, female, Barro Colorado, ventrite 5.

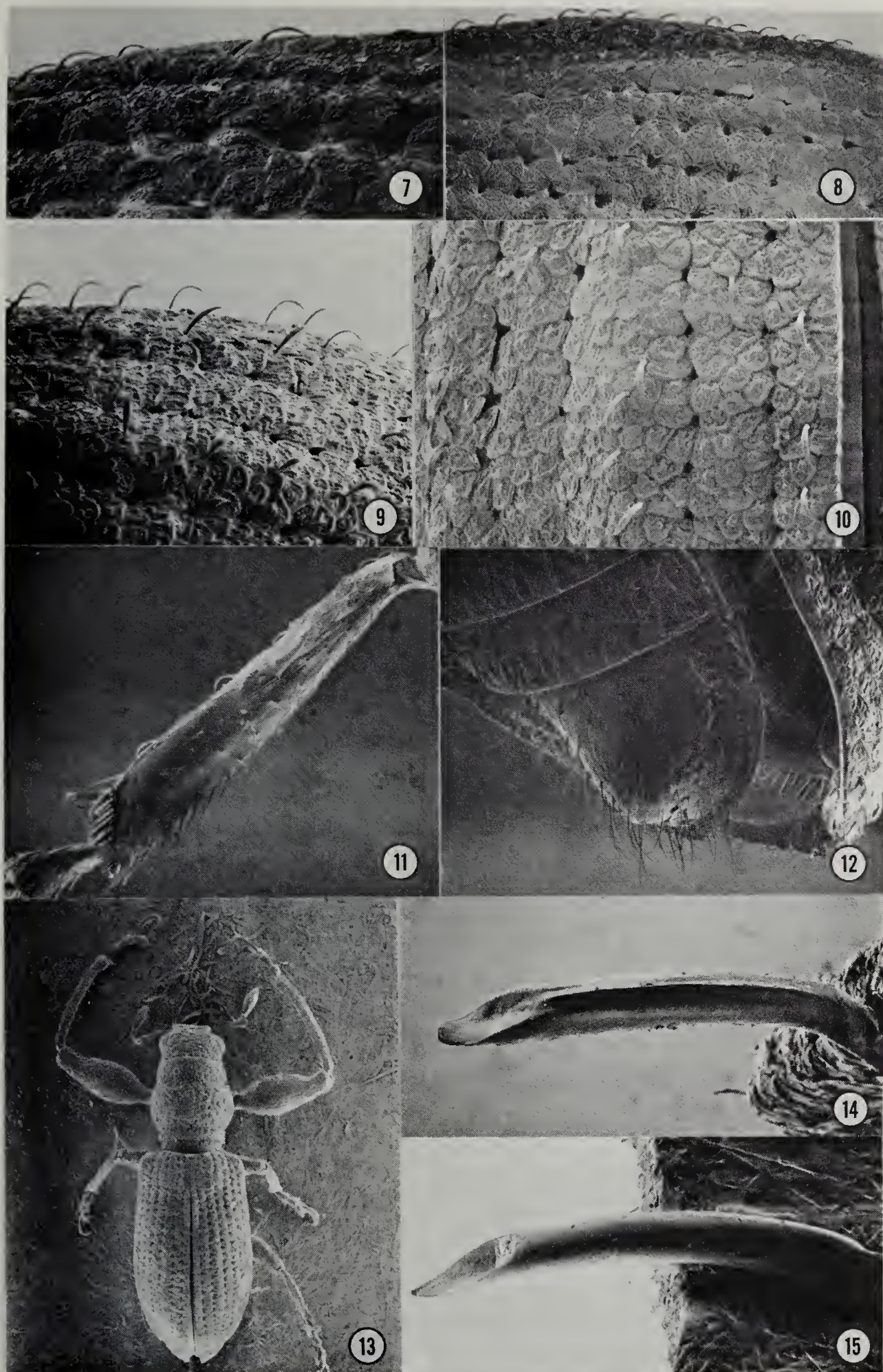


Fig. 7-15. *Pandeleteius* (*Exmenetypus*) spp.: 7) *championi*, allotype, vestiture near middle of elytra at suture in profile; 8) *opalescens*, female, Barro Colorado, vestiture near middle of elytra at suture in profile; 9) *hieroglyphicus*, paralectotype, vestiture near middle of elytra at suture in profile; 10) *hieroglyphicus*, paralectotype, vestiture near middle of elytra at suture in dorsal view; 11) *opalescens*, male, Duaca, inner surface of hind tibia; 12) *hieroglyphicus*, paralectotype, ventrite 5; 13) *championi*, type, dorsal view; 14) *opalescens*, Duaca, aedeagus in three-quarters profile; 15) *championi*, type, aedeagus in three-quarters profile.

hieroglyphicus and the related Central American species. Males may or may not have the hind tibia concave. The width of the elytral intervals and the number of teeth on the fore tibia may prove to be significant.

Voss (1954:231) listed *hieroglyphicus* from Peru based on a specimen in the Dresden museum. However, this needs verification since in the material I borrowed from Dresden there is no such specimen.

Pandeteius (Exmenetypus) championi Howden, **new species**
(Fig. 4, 5, 7, 13, 15)

Diagnosis: Form of *opalescens*. Elytral setae very small and inconspicuous, scarcely arched, evenly distributed on all intervals. Inner surface of hind tibia of male without scales, with numerous setae, not at all hollowed, only slightly flattened. Aedeagus with apex simply attenuate, dorsal surface not sculptured. Ventricle 5 of female almost flat.

Description: Holotype, male (Fig. 13), length 3.0 mm, width 1.2 mm. A slightly teneral specimen glued flat on a rectangular card, left hind leg glued to card separately, abdomen and aedeagus glued on point beneath beetle. Pale yellowish white marked with tan in a pattern similar to that of *hieroglyphicus* but reduced. Tan scales especially not always contiguous, but this partly due to teneral condition.

Beak widest at apex where it is as wide as head between eyes, narrowest at interantennal line where it is 1.1 times narrower than head between eyes. Beak 1.6 times shorter from anterior edge of eye than distance between eyes at their anterior edge. Interantennal line at basal fifth, biarcuate. Epistoma occupying approximately 0.5 of anterior edge of beak, its apex reaching 0.75 to interantennal line. Median line marked by an elongate interocular pit. Antennal club 0.75 times as long as scape.

Prothorax 1.04 times wider than long. Apical constriction at apical fourth, basal constriction at basal ninth along median line. No transverse or median impressions.

Elytra 2.4 times longer than prothorax, 1.1 times wider across humeri than across prothorax. Sides parallel for basal fifth, very slightly divergent to just beyond middle, thence rounded to apex, the apical terminus of intervals 4 to 6 scarcely entering outline. Intervals 3 and 4 conjointly obsoletely swollen on basal fifth. Intervals 1 and 2 narrow basally, width of 1 scale, rapidly becoming as wide as 2 scales; interval 2 before declivity as wide as 3 scales; interval 3 basally as wide as 3 scales, then widening to 4 scales; remaining intervals even, as wide as 2 to 3 scales; no intervals convex. In profile elytra slightly elevated from base to about middle; declivity at apical fifth oblique, its summit broadly rounded. Elytral setae (Fig. 7) very small and inconspicuous, recumbent, scarcely arched, approximately as long as 1 scale, evenly distributed on all intervals.

Separation of fore coxae not visible in type because of mount. Fore femur 1.7 times wider than hind femur. Left fore tibia with 6, right with 4 teeth on inner edge. Inner surface of hind tibia without scales, with numerous setae, not at all hollowed, only slightly flattened. Ventricle 4 only with posterior margin perpendicularly elevated, elevated by height of 1 scale. Ventricle 5 twice as wide across base as long, apex broadly rounded; moderately, evenly convex; as long as ventricle 2.

Aedeagus (Fig. 15) as long as first 4.25 ventrites, dorsal surface without sculpture or modification at 54X; apex simple, elongate, pointed.

Allotype, female, length 3.0 mm, width 1.2 mm. Specimen missing right middle leg beyond trochanter, left elytron dislodged and its humerus broken off; most scales present. Differs from type in the following respects: Head and beak (Fig. 4) extremely robust and possibly not typical of females. Beak 1.1 times wider between eyes than across widest part of apex, scarcely narrower at interantennal line. Surface of beak convex, "inflated" between interantennal line and frons; interocular pit shallow, squamose. Club 0.65 times as long as scape. Elytra 2.8 times longer than prothorax. Apical terminus of intervals 4 to 6 rounded, more evident in dorsal outline, apex slightly attenuate. Summit of declivity more abruptly rounded, situated at apical eleventh, declivity slightly concave. Fore coxae separated by approximately four-fifths the width of antennal club. Left fore tibia with 7, right with 4 teeth on inner edge. Ventricle 5 (Fig. 5) at base 1.6 times wider than long; obsoletely, evenly convex.

Type series: Holotype, male, GUATEMALA, Zapote, vibr. wanting, B.C.A., Col. IV pt. 3 *Pandeleiteius hieroglyphicus* Ch. var. [BMNH]. Allotype, female, same data as type [BMNH]. Paratypes: 1 female, same data as type [USNM].

Discussion: The female paratype has the same measurements as the allotype and is very much like it but is missing most of its dorsal scales. The beak of the paratype resembles that of the type except that the median line is glabrous and finely impressed to the interantennal line. Ventricle 5 is twice as wide as long.

This is the northernmost species of *Exmenetypus* and the simplest. Males may be separated by the simple aedeagus (dorsum not sculptured and apex simply pointed) and the scarcely modified hind tibia. Females may be separated from *hieroglyphicus* (the nearest species geographically) by the very inconspicuous, evenly distributed elytral setae and nearly flat ventrite 5. Females are very similar to those of *opalescens* but the setae are much less arched.

Pandeleiteius (Exmenetypus) opalescens (Faust)
(Fig. 2, 6, 8, 11, 14)

Menetypus opalescens Faust, 1892:2. Lectotype, here designated, male, with the following labels: "♂ Caracas Simon", "opalescens Faust", a 2 × 3 mm piece of gold paper, "Coll. J. Faust Ankauf 1900" on green paper, "TYPE" on red paper and my lectotype label [Dresden].

Diagnosis: Aedeagus with a dorsal median carina its full length; apex truncate. Hind tibia of male spatulate. Elytral setae uniserial and equally distributed on all intervals; most setae curved in a high arch with their apices touching the surface.

Description: Males length 2.8 to 3.1 mm, width 1.1 mm; females length 3.0 to 3.4 mm, width 1.2 to 1.3 mm. Color opalescent or luminous yellowish with faint markings, or off-white with tan markings, or dark metallic browns. Markings as depicted for *hieroglyphicus* by Champion (Tab. 8, fig. 2) or reduced to disconnected spots. Scales of beak apicad of interantennal line opalescent or bright submetallic blue or green.

Beak (Fig. 2) in both sexes approximately 1.6 times shorter from anterior edge of eye than distance between eyes at their anterior edge. Beak narrowest at interantennal line where in males it is 1.1 times narrower than head between eyes, in females 1.1 to 1.3 times narrower. Interantennal line at approximately basal fifth of beak, straight or slightly biarcuate, broadly glabrous, perpendicular or oblique. Epistoma occupying 0.5 to 0.66 of anterior edge of beak, its apex reaching 0.75 to interantennal line; posterior margin of epistoma marked by a strong carina, apex rounded or obtusely angled. Median line impressed from interantennal line to behind eyes. Frons with a pair of short, arcuate, transverse depressions between posterior half of eyes. Scape slightly bent ventrad and caudad just before its thickened apex. Antennal club averages 0.8 times as long as scape. Eye nearly hemispherical.

Prothorax usually as long as wide, longer in 3 specimens by up to 1.08 times. Median line unmarked; no transverse impressions.

Elytra of males 2.4 to 2.5 times longer than prothorax, elytra of females 2.4 to 2.7 times longer than prothorax. Elytra across humeri in both sexes usually 1.2 times wider than prothorax, ranging from 1.1 to 1.3 in both sexes, sides of elytra slightly divergent from base to about middle, thence very gradually rounded to apex; apical terminus of intervals 4 to 7 scarcely evident in dorsal outline in male, more evident in female. Intervals 1 and 2 narrow, basally width of 1 scale, gradually becoming as wide as 2 scales. Interval 3 distinctly wider and sometimes higher medially in both sexes. In profile elytra elevated from base to middle thence descending, broadly rounded to apex; summit of declivity ill-defined in male, slightly more evident in female. Setae (Fig. 8) mostly completely arched, slender, more conspicuous than in *championi*, approximately evenly distributed on the intervals, uniserial; each seta as long as 1 to 1.5 scales.

Fore coxae separated by distance less than or equal to greatest width of scape in male, equal to or wider than greatest width of scape in female. Fore femur of male 1.5 to 1.9 times wider than hind femur; fore femur of female 1.5 to 2.0 times wider than hind femur. Inner surface of fore femur on distal half often with granules. Inner edge of fore tibia with 3 to 6 (usually 4 or 5) teeth. Hind tibia of male (Fig. 11) with distal half of inner surface modified as follows: without scales, with a few long hairs, smooth and shiny, flattened, widened, obliquely hollowed before apex. Inner surface of middle tibia of male similarly modified but to a lesser extent. Middle and hind tibia of female modified to a lesser extent than in male, never widened, but glabrous and flattened.

Ventrite 5 of male slightly, evenly convex; apex truncate; with flattened margin narrow, complete; slightly longer than ventrite 2. Aedeagus (Fig. 14) with a dorsal median carina extending from orifice almost to base; apex flattened, truncate; four-fifths as long as abdomen.

Ventrite 5 of female (Fig. 6) similar to that of male but shorter than ventrite 2, apex narrowly to broadly truncate.

Type Material: Faust described *opalescens* from 2 males from Caracas. The lectotype is in good condition, missing only tarsal segments 2, 3, and 4 on the right hind leg; the aedeagus is mounted on a point glued to the same point on which the beetle is mounted. The paralectotype, here designated, is in the Museum National d'Histoire Naturelle, Paris, and bears the following labels: "Caracas", "Museum Paris, Venezuela, E. Simon 1897", "J. Faust, det. 1897",

"Type" in handwriting as well as a mechanically printed label, and my paralectotype label.

Distribution: Elevations usually between 500 and 3000 feet in the Coastal Cordillera of Venezuela and in Panama. Total number of specimens examined: 16. PANAMA: Canal Zone: 1 female, Barro Colorado, V-29, Darlington [MCZ]; Chiriqui: 1 male, 3 females, Bugaba, Champion (cotypes of *hieroglyphicus*, "var. worn" (1)) [BMNH, USNM]; 1 male, 2 females, Volcan de Chiriqui, below 4000 feet (1), 25-4000 feet (2), Champion (cotypes of *hieroglyphicus*) [BMNH, Howden]. VENEZUELA: Aragua: 3 females, San Sebastian, 17-VIII-65, J. & B. Bechyné [UCV]; Distrito Federal?: 2 males, "Caracas" lectotype [Dresden], paralectotype, [Paris]; Lara: 1 male, 1 female, Duaca, 14-II-65, J. Bechyné [UCV]. COUNTRY UNKNOWN: 1 female, "Columb. Moritz" (this label refers to Colombia or Venezuela (Horn and Kahle, 1936:182) and personal experience [Berlin]).

Discussion: The more metallic or opalescent scales tend to be less sculptured than the nonmetallic white, brown, etc., scales. In the lectotype the majority of scales are decidedly opalescent which would account for Faust's comment that the scales of the beak are the same as those apicad of the interantennal line. The description is accurate enough though not very detailed. The scales of the apex of the beak often reflect brilliant blue or green. One specimen from Volcan de Chiriqui has the arcuate frontal depressions obsolete and the eyes much larger and flatter than in the rest of the series. Two instances of additional elytral setae were observed, both in females on interval 3. The inner surface of the fore femur is distinctly granulate in most specimens including the lectotype; no granules are visible at 54X in 1 male and 1 female from Bugaba, 1 male from Chiriqui, and 1 male from Duaca.

The carinate, truncate aedeagus and spatulate hind tibia are the major distinguishing characteristics of *opalescens* males. The characters of the elytral setae (evenly distributed and usually completely arched) are also specifically distinctive. Females may be separated from *hieroglyphicus* by their flatter ventrite 5 and smaller size, but are difficult to separate from *championi* except geographically.

The northern limit of *opalescens* is apparently the Panama-Costa Rica border. In the forthcoming paper, several other species of *Pandeleiteius* (s.s.) will be shown to have similar ranges in Central America and northern South America.

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